Our experience concerning Peripheral Repetitive Magnetic Stimulation (p-RMS) vs. classical electrical stimulation (ES) in patients with incomplete post spinal cord injury (SCI) paraplegia - preliminary results

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Abstract

Hypothesis:
We performed this study to reveal different aspects of p-RMS applied on motor points of lower limbs.

Objective:
To compare, in these respect, the efficiency of p-RMS vs. ES.

Material and Method:
We studied 32 patients: 21 male, 11 female, with incomplete post SCI paraplegia, divided into two equal groups, who received 20 days therapy: 20 minutes galvanic-therapy; the study group received aside p-RMS-5 minutes, on targeted muscles upon their motor points: tibialis anterioris (TA), tricepsis suralis (TS); the controls received aside: ES 5 minutes upon the same areas. All patients received also resembling pharmacological and kinetic therapy. The patients were evaluated at the beginning and the end of study: muscle strength, balance standing - Tinetti scale-, quality of life, (QoL - questionnaire Flanagan SF 36) and 6 minute walking distance (6MWD) test, with procedure and assessment repeated after two months. We could use for these small lots non-parametrical Cochrane test.

Results:
We obtained a comparable variance of average muscle force for TA (study 0.88, control 0.42, p=0.658) and TS (study 0.9, control 0.72, p=0.751). Tinetti scores showed significant statistical better results (p=0.000) for the study group (3) vs. controls (2.34). QoL improved significantly (p=0.000) in the study lot (SF av. 509, 18) compared to the controls (SF av. 567, 85). 6MWD test emphasized a significant improvement of walk in the study group vs control (p=0, 01).

Conclusion:
This study suggests p-RMS could be a solution to improve balance, standing, gait and QoL compared to ES, in such cases.

Key words: pRMS, ES, SCI, muscle force, balance, QoL